

# **DEFENSE INFORMATION INFRASTRUCTURE (DII)**

## **COMMON OPERATING ENVIRONMENT (COE)**

### **DII COE Version Description Document for Distributed Computing Environment (DCE) Server Segment v1.0.0.1 (HP-UX 10.20) Version Description Document 05/13/97**

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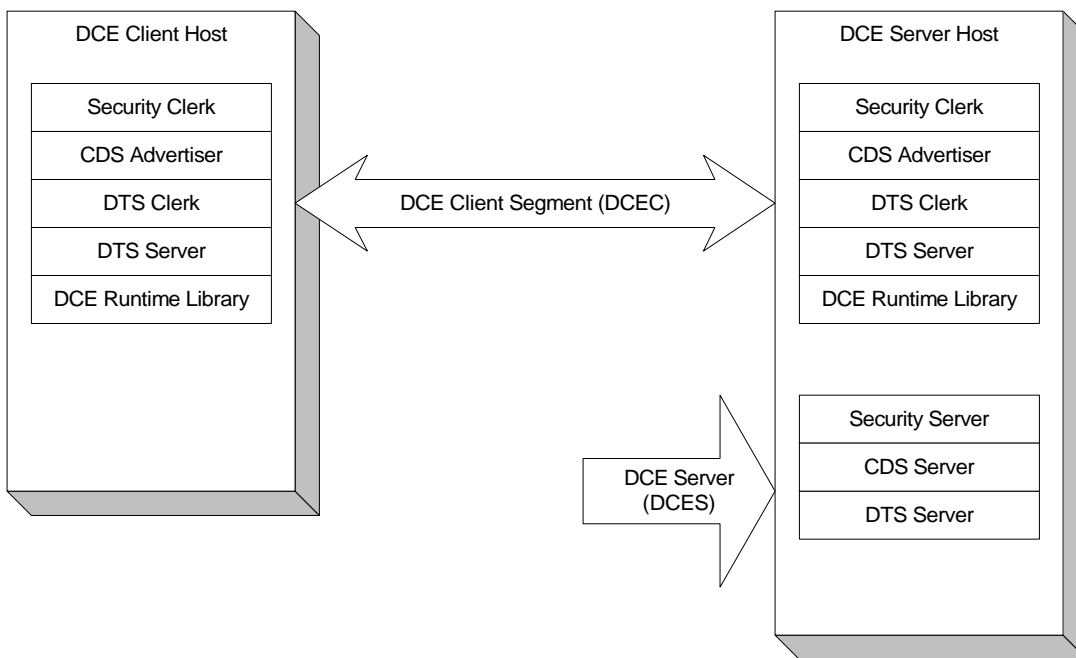
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## 1. System Overview

A DCE Server is a system that runs an application client or an application server along with CDS server, DTS server or Security Server. The DCE Server uses the DCE Remote Procedure Call (RPC) facility to provide a way of communicating between software modules running on different systems.

DCE Server (DCES) includes a set of services also provided in the DCE Client (DCEC) segment. The DCES also provides a set of server processes not included in the Client Segment. Figure 1 shows the DCES host services and its relationship to DCEC host services. For a cell to be properly configured there must be at least these three components configured.

- CDS Server
- DTS Server
- Security Server



**Figure 1 DCE Services**

The DCES segment provides the following set of services:

- CDS Server - As a server process it accepts and responds to requests from clients and application servers. The CDS Server retrieves information from the structured pool of names called the CDS namespace.

- Security Server - The Security Server ensures trusted communication between clients and servers through a series of checks and verifications. There are three components of the security server:
  - Authentication service which controls the process of verifying that principals are who they say they are.
  - Privilege service provides the user's privilege attributes used to verify that the principal has the right to perform the requested operation.
  - Registry service maintains the database of security information known as the registry.

The DCEC segment supports the following list of services:

- Client Services
  - Security Client — The security clerk's enables the client to communicate with the security server daemon (**secd**). Maintains the login context and key function for the host principal. The daemon **dcad** handles this task and registers binding information and maintains the host endpoint map. Maintaining the endpoint map is often referred to as host services. **dcad** provides access to the DCE control program (**dcecp**).
  - CDS advertiser — The CDS advertiser function sends and receives advertisements of available CDS servers. It supports client applications in locating the CDS server, **cdsd**. The CDS advertiser provides the CDS Clerk functionality.
    - CDS Clerk - Its function is to provide name information to other applications or to users. It performs other tasks, such as caching information, but only to serve its main purpose of delivering information. This functionality has been included in the CDS advertiser.
  - DTS Clerk — As a client (clerk) process receives time values from the DTS Server and synchronizes the local clock (**dtstd daemon**).
  - DTS Server
    - Global server, synchronizes with an external, trusted time reference and provides the time to the local servers in a distributed network (**dtstd daemon**).
    - Local Server, synchronize time with one or more local **dtstd** servers in the cell and adjusts the clock on the local host.
- DCE Server Services

- Security Server-The Security Server maintains the security functions of the cell. It maintains a registry of user accounts for the purposes of authentication and access control.
- CDS Server-The CDS Server provides a list of the cell's resources. Application Servers are required to provide their location and communication protocols to the CDS Server. The Server uses the CDS Advertiser to announce its presence known within the cell. Then it will make the necessary information available to the client upon demand.
- DTS Server
  - Global server, synchronizes with an external, trusted time reference and provides the time to the local servers in a distributed network (**dtssd daemon**).
  - Local Server, synchronize time with one or more local **dtssd** servers in the cell and adjusts the clock on the local host.

The table below displays the process differences between the server and the client. It shows each function and the associated daemon that is responsible for handling that service. The DCE Client is a subset of the DCE server functionality. Based on the Table 1, the HP-UX 10.20 Server Segment has five DCE processes: **dcad**, **cdsadv**, **dtssd**, **secd**, and **cdsd**.

Service	Server Daemons	Client Daemons
Security Client	dcad	dcad
CDS Clerk	cdsadv	cdsadv
CDS Advertiser	cdsadv	cdsadv
DTS Clerk	dtssd	dtssd
DTS Server	dtssd	dtssd
Security Server	secd	
CDS Server	cdsd	
DTS Server	dtssd	

**Table 1** DCE Daemons

## 2. Reference Documents

- *Planning and Configuring HP DCE 1.5*
- Version Description Document Defense Information Infrastructure (DII) Common Operating Environment (COE) *Distributed Computing Environment (DCE) Server Segment* Version 1.0.0.1, May 13, 1997.
- Defense Information Infrastructure (DII) Common Operating Environment (COE) *Distributed Computing Environment Server (DCES) Segment v1.0.0.1 Installation Instructions for HP-UX 10.20*

- Version Description Document Defense Information Infrastructure (DII) Common Operating Environment (COE) *Distributed Computing Environment (DCE) Client Segment* Version 1.0.0.1, May 5, 1997.

### **3. Version Description**

#### **3.1 Inventory of Materials**

- Magnetic Media: Two 8mm tapes consisting of relative tar of the Distributed Computing Environment (DCE) Server Segment, Version 1.0.0.1/HP-UX 10.20, May 13, 1997
- Version Description Document Defense Information Infrastructure (DII) Common Operating Environment (COE) *Distributed Computing Environment (DCE) Server Segment, Version 1.0.0.1*, May 13, 1997
- Defense Information Infrastructure (DII) Common Operating Environment (COE) *Distributed Computing Environment Server (DCES) Segment v1.0.0.1 Installation Instructions for HP-UX 10.20*

#### **3.2 Software Changes**

Reference Appendix A for a list of the DCE Server Segment software changes.

#### **3.3 Test Environment**

- HP/9000 715 Workstation
- HP-UX Operating System version 10.20
- DII COE Kernel version 3.0.1.0 HP-UX 10.20, material 04/14/97
- DII COE Developers Toolkit version 3.0.1.0 HP-UX, material date 04/14/97
- HP DCE 1.5 for HP-UX 10.20

#### **3.4 Machine Requirements**

The following is the minimum system requirements to run the HP DCEC segment:

- Memory is a minimum of 64MB
- Swap space is a minimum of 100MB

### **4. Installation Instructions**

Reference the Distributed Computing Environment Server (DCES) Segment v1.0.0.1 Installation Instructions for HP-UX 10.20 for instructions on installing the DCES Segment.

## 5. Known Problems and Errors

### 5.1 COEPromptPasswd

The **COEPromptPasswd** displays a window with an optional password prompt message. This command does not support a need to have a user log in as root and pass the password from the prompt to the **su** command.

### 5.2 Providing ICON Access

Access to the following ICON's is only available through the use of SAM: **DCE Configuration Manager** (DCM), **CDS Browser**, and **Account Manager**. It was attempted to provide access from the **SA\_Default** directory. However, these commands require that you have a UNIX ID of root. The only method of providing these access was by setting the set-uid bit for the command. Since this can result in a security problem it was determined not to implement these features until they can be further researched.

## 6. Release Notes

### 6.1 DEINSTALL

After de-installing the DCES segment using the COE Installer perform the following steps

- 1 Change "su" to root.
- 2 Type /etc/dce\_config
- 3 If this machine is configured as the Master Security Server, select REMOVE, otherwise select UNCONFIGURE
- 4 Exit dce\_config by selecting "99"
- 5 Type /usr/sbin/swremove B2920A\_APZ

De-installation of the DCES segment is now complete.